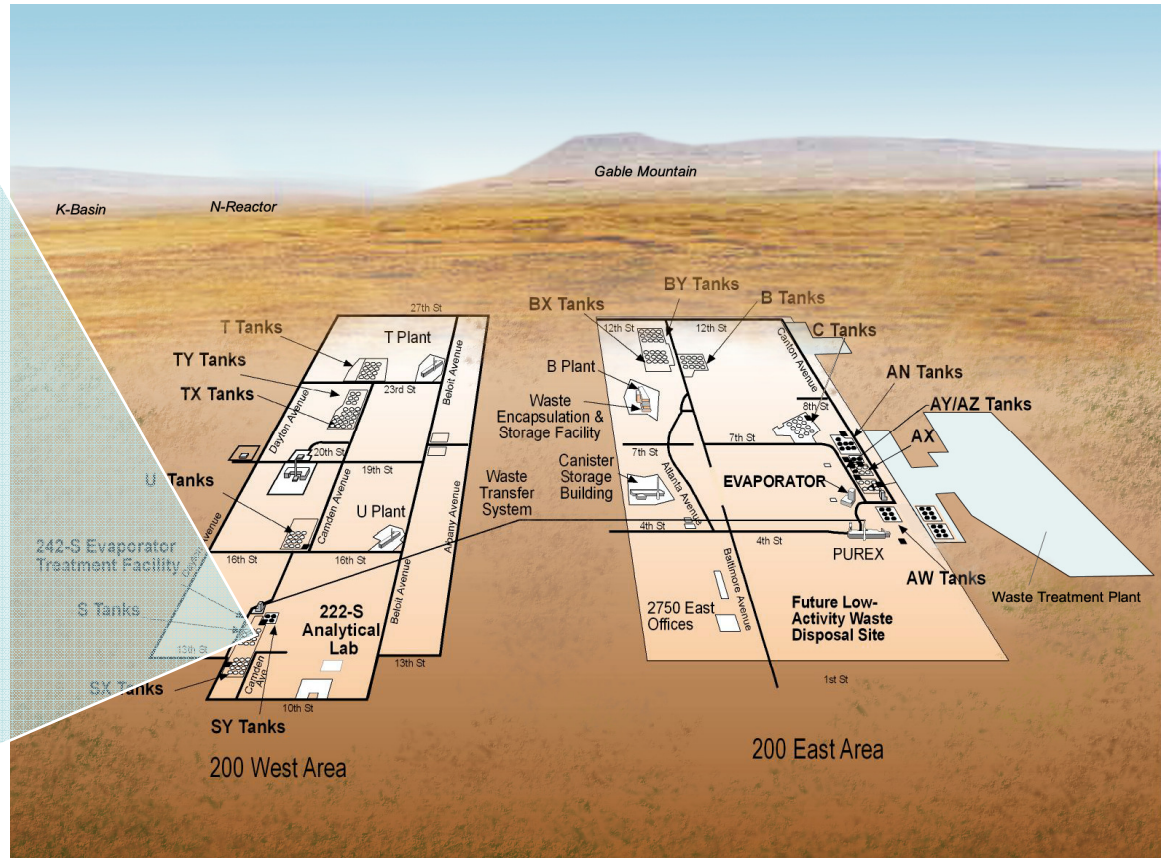


# S-102 Event and Investigation Overview



**S-102**

*S-Farm*



*200 Area Tank Farms*



# Spill Area



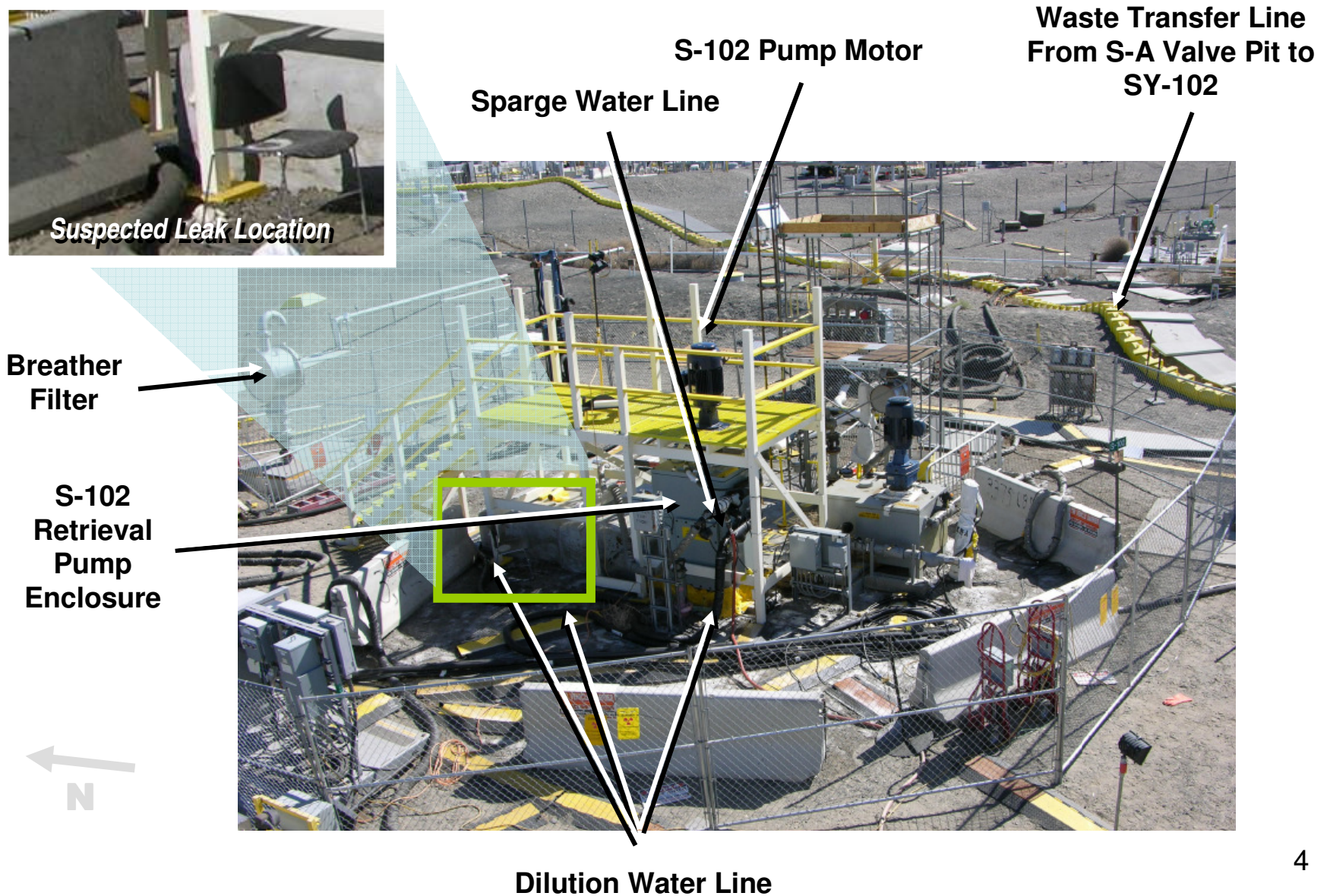


# Spill Area

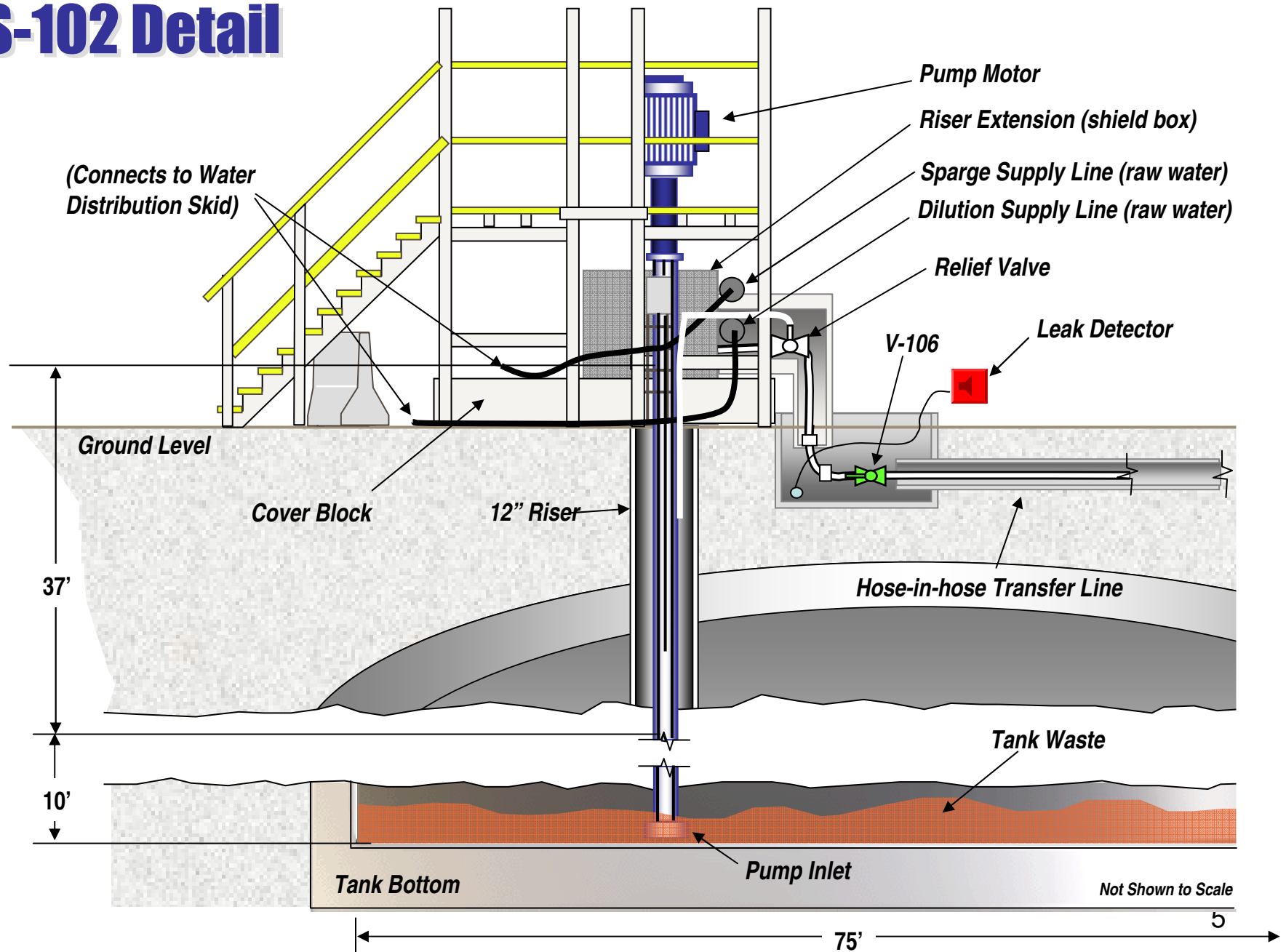




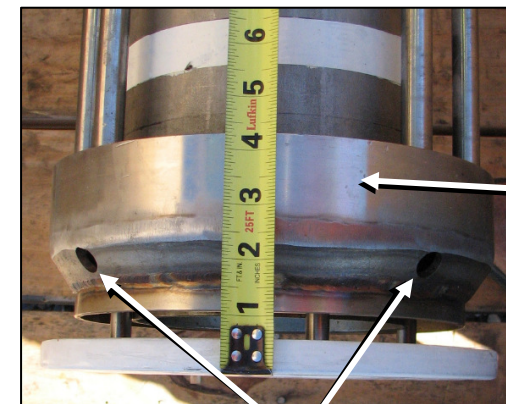
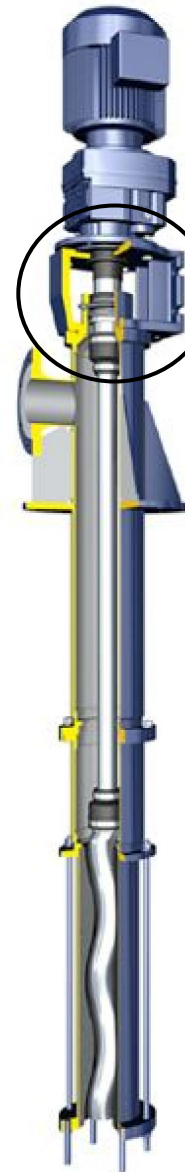
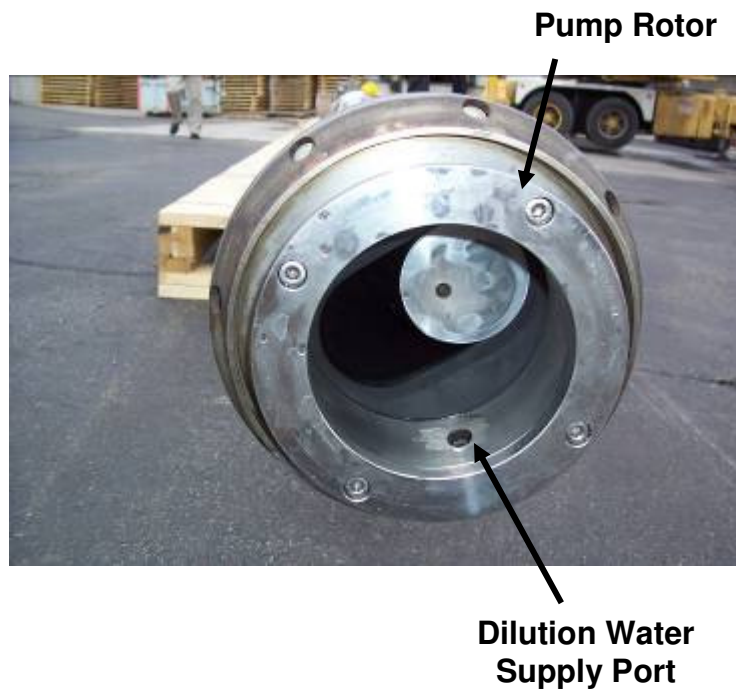
# S-102 Event Site Overview



# S-102 Detail



## Pump Inlet Nozzle



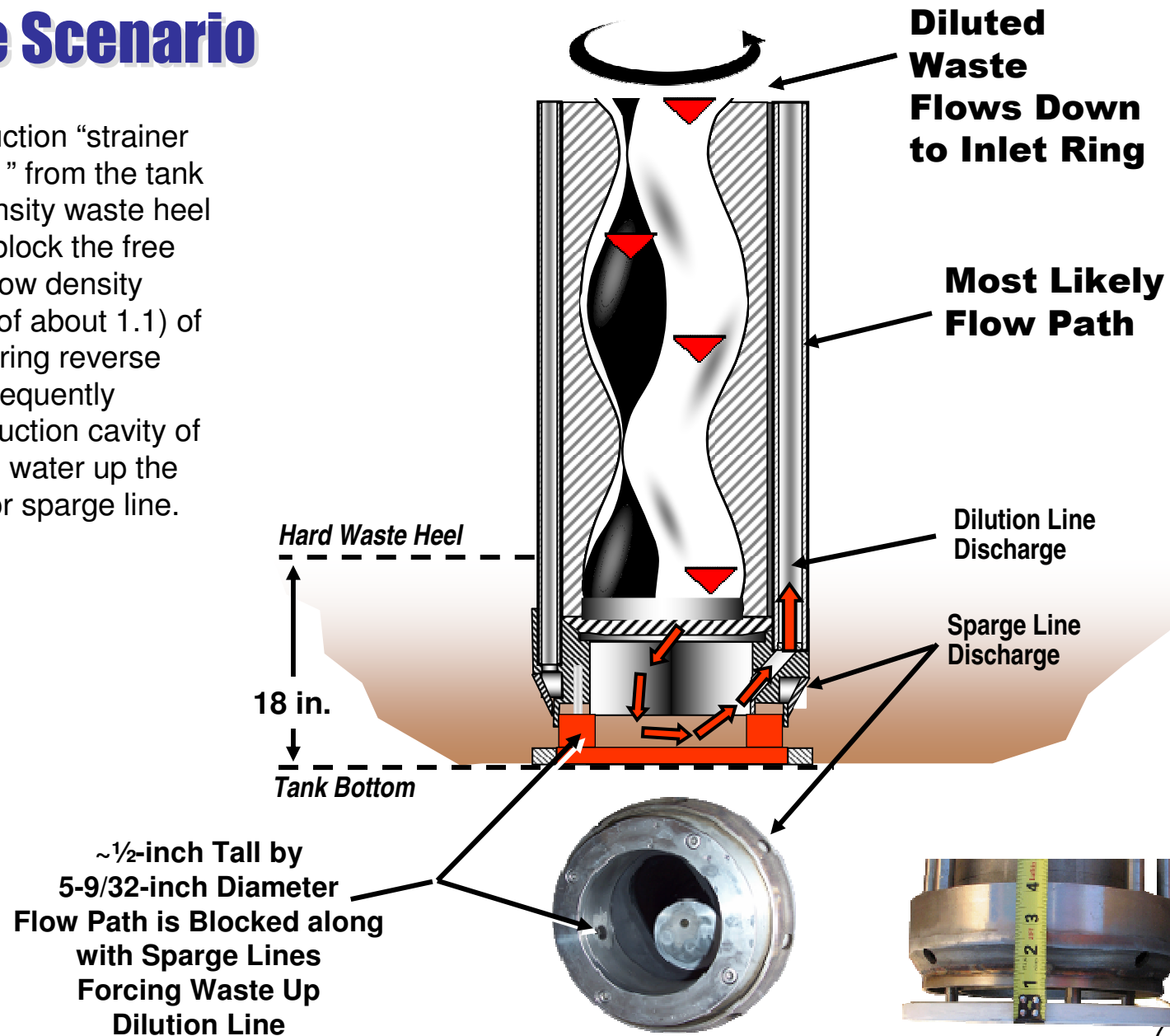
**Sparge Ring**

**Sparge Water/Air Distribution Ports**



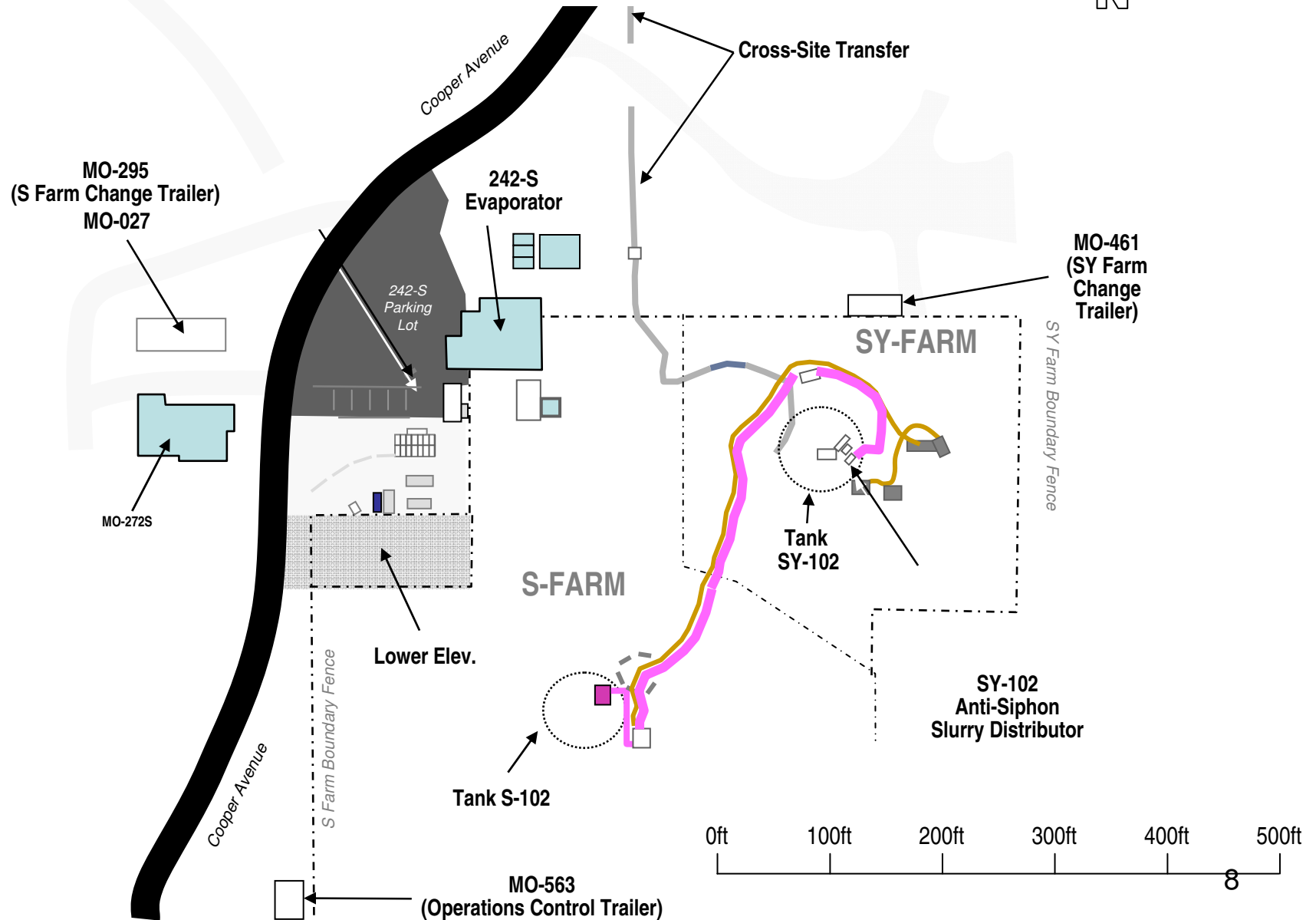
# Probable Scenario

With the pump suction “strainer plate” within  $\frac{1}{2}$  - 1” from the tank floor, the high density waste heel was sufficient to block the free flow of relatively low density (Specific Gravity of about 1.1) of transfer waste during reverse rotation and subsequently pressurized the suction cavity of the pump, forcing water up the dilution line and/or sparge line.



*Bottom and Side-View Photo of Pump Inlet*

# S-102 Event Site





# Immediate Actions

- Spill area stabilized (Soil Sement and Safeguard)
- Spill area surrounded by locked fence
  - Postings for: high radiation, high contamination, respiratory protection required for entry.
- Spill area monitored for potential spread of contamination
  - Surveys every four hours at high radiation/high contamination area boundary
  - Weekly samples inside the fenced area including contamination and dose rate surveys
- Industrial Hygiene monitoring

# **Event Investigation and Recovery Approach**

- Three investigation teams chartered by CH2M HILL Hanford Group, Inc.
  - Spill event and initial actions
  - Emergency response
  - Health effects and personnel followup
- Recovery efforts

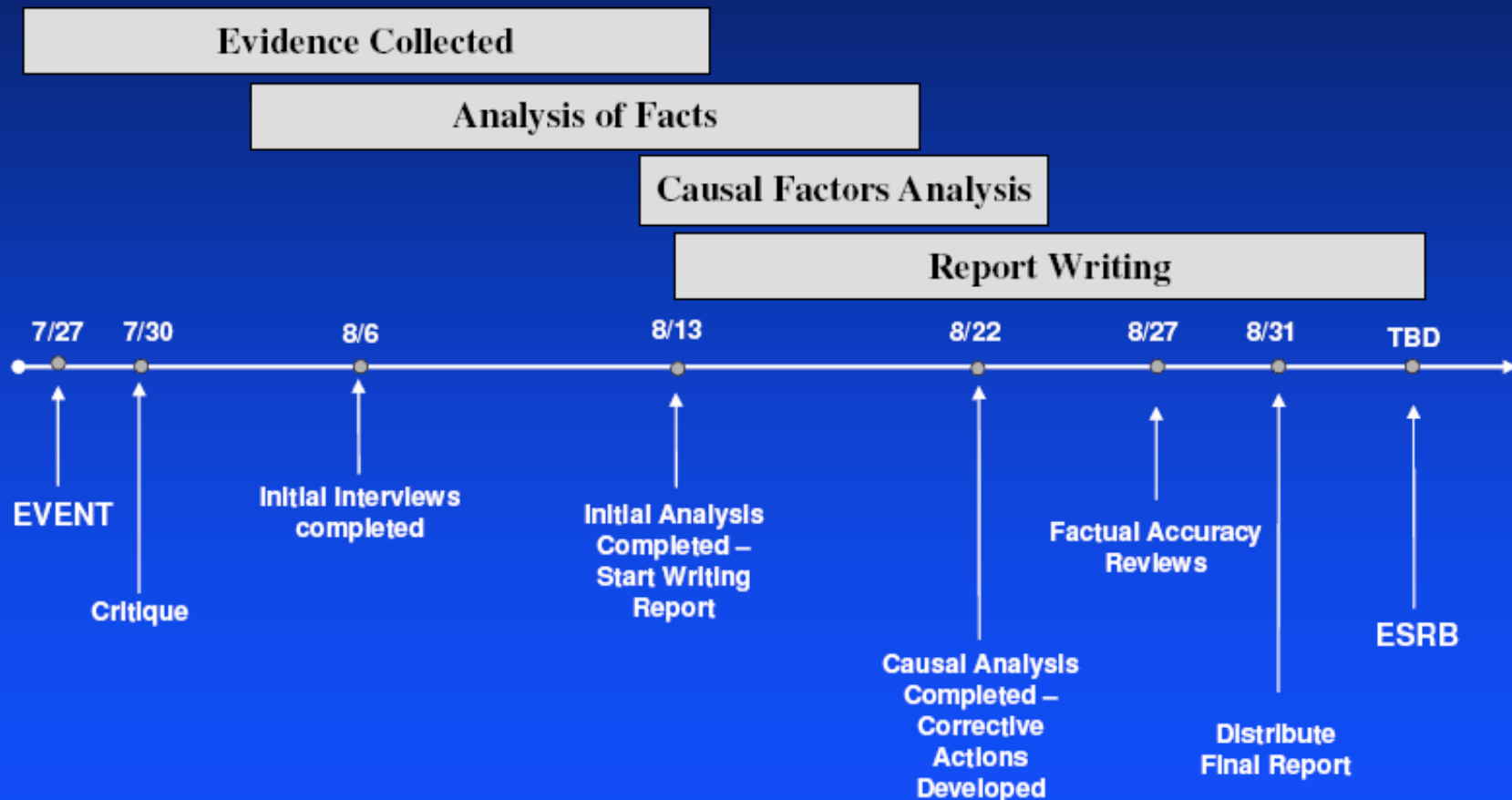


# CH2MHILL S102 Spill Event Investigation

- CH2M HILL Investigation Team
- Investigative approach is consistent with DOE Order 225.1A, ***Accident Investigations***
- Investigation Protocol
  - Preserving the Event Scene
    - Recording the Event Scene (Photographs, Video, Logs)
    - Handling and Preserving Physical Evidence
    - Chain of Custody
  - Gathering Information and Facts
    - Reports (Preliminary report issued), Procedures, RadCon Data, Process Information, PERs
  - Interviewing Witnesses
  - Progress Reporting
  - Documenting the Event
    - Event and Causal Analysis, Barrier Analysis, Root Cause Analysis
  - Final Report

# CH2MHILL Event Investigation

## *S-102 Leak Event Investigation Time Line*





# **CH2M HILL Emergency Response Investigation Team**

- Investigation coordinated with Hanford site Fire Department and Emergency Response Organization
- Initial report drafted
  - several opportunities for improvement identified
  - several strengths
- Report estimated completion end of September or October 2007

# Health Effects Investigation

Health Effects Assessment Team Chartered to:

- Identify affected workers
- Identify hazards
- Identify health effects of hazards
- Communicate results
- Prepare summary report



# Recovery Actions Underway

- Area monitoring continues
  - Routine application of fixative
- Equipment removal planning in progress
  - Team planning approach
  - Type C mockup – highest level
  - Some potential and precautions for additional fluid to leak from hose upon removal
- Will autopsy removed equipment to assist event investigation team